PATENT Docket No.: DE040043US1

## AMENDMENTS TO THE CLAIMS

The following Listing of Claims will replace all prior versions and listings of claims in this application.

## **LISTING OF CLAIMS**

- 1. (Cancelled)
- 2. (Currently amended) An apparatus according to claim [[1]] 11, wherein the sectional image represents a three-dimensional volume, and the corresponding three-dimensional baseline function is composed of separate two-dimensional baseline functions that are calculated for two-dimensional slices of the sectional image.
- 3. (Cancelled)
- 4. (Currently amended) An apparatus according to claim [[1]] 11, wherein the baseline function is determined by fitting a parametric model function to the data in the segmented areas.
- 5. (Previously presented) An apparatus according to claim 4, wherein the parametric model function is a spline function or a polynomial, preferably a polynomial of sixth degree.
- 6. (Currently amended) An apparatus according to claim [[1]] 11, wherein the baseline function is determined by low-pass filtering of the data in the segmented areas.
- 7. (Currently amended) An apparatus according to claim [[1]] 11, wherein the baseline function is determined by a) spectral analysis of the sectional image or the segmented areas of the sectional image; b) composition of the baseline function from only the lower frequency components of the resulting spectrum.
- 8. (Currently amended) An apparatus according to claim [[1]] 11, wherein image areas

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outside the object are segmented and excluded from the correction with the baseline function.

- 9. (Currently amended) An apparatus according to claim [[1]] 11, further comprising a rotational cone beam X-ray device for the generation of X-ray projections of an object.
- 10. (Cancelled)
- 11. (New) An apparatus for processing a sectional image of an object, the apparatus comprising a computer and an X-ray imaging apparatus, wherein the computer carries out the following transformations:
- a) receiving into memory a sectional image reconstructed from X-ray projections of an object from different directions;
- b) segmenting the sectional image by applying a gray value threshold thereby creating at least three segmented areas, wherein the gray value windows of the segmented areas correspond narrowly to the densities of bone, tissue, and air;
- c) eroding the segmented areas at their boundaries;
- d) determining a baseline function that describes spatially slowly varying artifacts of the sectional image based on the data of the segmented area corresponding to tissue;
- e) resegmenting the baseline-fit region of the segmented area corresponding to tissue;
- f) eroding the boundaries of the resegmented area; and
- g) storing to the memory a corrected sectional image by compensating the original sectional image using the baseline function.
- 12. (New) A method for processing a sectional image of an object, comprising:
- a) providing in memory a sectional image reconstructed from X-ray projections of an object from different directions;
- b) segmenting the sectional image by applying a gray value threshold thereby creating at least three segmented areas, wherein the gray value windows of the segmented areas correspond narrowly to the densities of bone, tissue, and air;
- c) eroding the segmented areas at their boundaries;
- d) determining a baseline function that describes spatially slowly varying artifacts of the sectional image based on the data of the segmented area corresponding to tissue;

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- e) resegmenting the baseline-fit region of the segmented area corresponding to tissue;
- f) eroding the boundaries of the resegmented area; and
- g) storing to the memory a corrected sectional image by compensating the original sectional image using the baseline function.
- 13. (New) A computer memory comprising software for the steps:
- a) receiving into memory a sectional image reconstructed from X-ray projections of an object from different directions;
- b) segmenting the sectional image by applying a gray value threshold thereby creating at least three segmented areas, wherein the gray value windows of the segmented areas correspond narrowly to the densities of bone, tissue, and air;
- c) eroding the segmented areas at their boundaries;
- d) determining a baseline function that describes spatially slowly varying artifacts of the sectional image based on the data of the segmented area corresponding to tissue;
- e) resegmenting the baseline-fit region of the segmented area corresponding to tissue;
- f) eroding the boundaries of the resegmented area; and
- g) storing to the memory a corrected sectional image by compensating the original sectional image using the baseline function.